

Historic, Archive Document

Do not assume content reflects current scientific knowledge, policies, or practices.

AUGUST, 1950

1.9622
A3F76
No. 363

TIMBER PRODUCTION AND COMMODITY DRAIN FROM FLORIDA'S FORESTS, 1948

by

MacKay B. Bryan, Forester
Division of Forest Economics

USDA
NATL AGRIC LIBRARY
199 FEB -9 P 4:38
FOREST SERVICE
RECORDS
DIVISIONAL BRANCH



U.S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE

SOUTHEASTERN FOREST EXPERIMENT STATION
ASHEVILLE, NORTH CAROLINA

I. T. HAIG, Director

In cooperation with
FLORIDA FOREST SERVICE
TALLAHASSEE, FLORIDA
C. H. COULTER, State Forester

CONTENTS

	<u>Page</u>
INTRODUCTION - - - - -	1
PRODUCTION OF FOREST PRODUCTS - - - - -	2
Lumber - - - - -	3
Pulpwood - - - - -	4
Veneer - - - - -	6
Fuel wood, fence posts, and farm timbers - - - - -	8
Poles and piling - - - - -	9
Hewn cross ties - - - - -	9
Naval stores - - - - -	9
Other products - - - - -	10
Comparison with total 1936 production - - - - -	10
COMMODITY DRAIN - - - - -	11
Utilization of trees cut - - - - -	12
Size of trees cut - - - - -	13
Drain by species group - - - - -	14
Drain by forest product - - - - -	16
Geographic source of commodity drain - - - - -	17
APPENDIX - - - - -	20
Production and drain tables - - - - -	21
How the data was obtained - - - - -	34
Reliability of the data - - - - -	34

TIMBER PRODUCTION AND COMMODITY DRAIN FROM FLORIDA'S FORESTS, 1948

It is generally recognized that Florida's prosperity depends in a large measure upon tourists, citrus and truck crops, and the livestock industry. Without doubt these will continue to be major revenue producers, but the State would be short-sighted indeed if it did not fully recognize its other assets. Forest land and timber are among these--the base for the leading manufacturing industry in the State.

Finished forest products accounted for about 30 percent of the total value added by manufacturing in 1947. Furthermore, the value of these products when ready for shipment was 232 million dollars (table 1) compared to 115 million as the gross packed value of all citrus. Tourism, which is generally conceded to provide about one-third of the income of Floridians, returned an estimated 790 million dollars to the people of the State in 1947. Thus, for every 3.4 dollars received from tourists, one dollar was received from the sale of finished forest products.

Table 1.--Value of forest products manufactured in Florida, 1947^{1/}

Product	Value added by manufacture	Value of products shipped
	<u>Thousand dollars</u>	<u>Thousand dollars</u>
Pulp, paper, & board	48,303	128,491
Lumber & planing mill products	26,935	44,891
Wooden boxes	9,025	15,962
Treated poles, piles, etc.	4,257	13,865
Steam distilled naval stores	486	10,255
Wood naval stores	5,560	9,520
Mill work	3,966	8,694
Other wood products ^{2/}	320	688
Total	98,852	232,366

^{1/} 1947 Census of Manufactures.

^{2/} Excludes wooden furniture.

Some 700 sawmills, distributed from Pensacola to the Keys, cut over one-half billion board feet of lumber annually, eight large pulp mills consume one and one-quarter million cords of wood each year, veneer plants use nearly 100 million board feet of logs to make crates and boxes for citrus and truck crops, and wood naval stores plants annually harvest nearly three-fourths of a million tons of stumps. Nearly 14 million trees are being chipped for their gum. Millions more are cut for cross ties, poles, piling, fence posts, and fuel wood. Altogether, the value added by the manufacture of rough logs, bolts, stumps, and crude gum into finished products amounted to nearly 100 million dollars in 1947.

PRODUCTION OF FOREST PRODUCTS

In 1948 the production of forest products was fully as great as in 1947, and in the case of pulpwood considerably greater. Altogether, 286 million cubic feet of wood were harvested from Florida's forests. Approximately 90 percent was pine and cypress, the rest various species of hardwoods.

Twenty-three primary forest products (table 7) were harvested, but pulpwood and sawlogs were by far the leading items (fig. 1). These, together with old-growth pine stumps, fuel wood, and veneer bolts accounted for 94 percent of the total production, expressed in cubic feet of wood used.

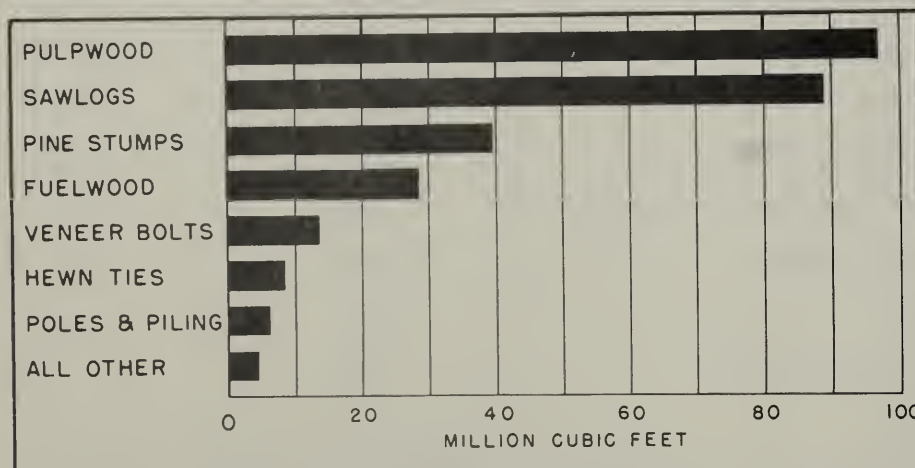


Figure 1.--Wood used for primary forest products, 1948

Lumber

In 1948 the production of lumber, including sawn cross ties, by Florida sawmills was 1/571 million board feet. Compared to 2/1947, total production increased about seven percent. Softwood production was 11 percent greater, while the cut of hardwood lumber was one-third less. Pine amounted to 79 percent of all the lumber sawed in Florida. Sixteen percent of the total was cypress. Hardwood, accounting for only six percent of the total, was cut chiefly from the gums, bay, magnolia, and red oaks (table 2).

Table 2.--Lumber production by species

Species	Production	
	<u>Thousand bd. ft.</u>	<u>Percent</u>
Softwoods:		
Yellow pine	448,328	78.6
Cypress	89,412	15.7
Cedar	850	0.1
Total softwoods	538,590	94.4
Hardwoods:		
Gums, tupelo and black	10,514	1.8
Red oaks	6,433	1.1
Bay and magnolia	5,220	0.9
Sweetgum	5,590	1.0
White oaks	1,948	0.3
Ash	1,024	0.2
Maple	466	0.1
Other hardwoods	961	0.2
Total hardwoods	32,156	5.6
Total all species	570,746	100.0

Taylor County ranked as the number one producer of lumber, accounting for 13 percent of the total production in the State. Escambia County was second with 4.6 percent, followed by Duval, Polk, Marion, Alachua, and Hillsborough, each with more than four percent. These seven counties produced two-fifths of all lumber sawed in Florida (table 8).

1/ The 550 million board feet reported by the Station in the Southern Lumber Journal of May, 1950 did not include a late production report of a large mill.

2/ Census of Manufactures, 1947, U. S. Bureau of the Census.

A total of 684 sawmills produced lumber in 1948 (fig. 2) and 123 additional mills were idle. In contrast to some other southern states, large mills accounted for a relatively high proportion of the total cut. For instance, 17 mills produced 36 percent of all the lumber; and only 40 mills sawed over one-half of it (table 3). A large share of the sawmills in the State were insignificant producers of lumber; for instance, a group of 400 small mills cut only 6.2 percent of the lumber.

Table 3.--Lumber production by mill class

Mill class	Active mills	Pine	Cypress	Cedar	Hardwoods	Total	
<u>Thousand bd. ft. per year</u>	<u>Number</u>	<u>Thousand bd. ft.</u>	<u>Thousand bd. ft.</u>	<u>Thousand bd. ft.</u>	<u>Thousand bd. ft.</u>	<u>Thousand bd. ft.</u>	<u>Percent</u>
1- 299	404	29,710	3,620	84	2,069	35,483	6.2
300- 499	68	21,266	1,919	520	1,582	25,287	4.4
500- 999	68	40,677	3,221	45	1,706	45,649	8.0
1,000-2,999	104	152,858	14,297	186	5,348	172,689	30.3
3,000-4,999	23	66,441	11,574	--	5,095	83,110	14.6
5,000 & over	17	137,376	54,781	15	16,356	208,528	36.5
Total	684	448,328	89,412	850	32,156	570,746	100.0

The general trend of lumber production is downward. During the first three decades of the present century when Florida still had ample supplies of virgin timber, the annual production averaged close to one billion board feet per year. In 1930, with the virgin timber practically gone and a major depression well under way, lumber production dropped abruptly and in 1932 reached a low of only 420 million board feet, as shown in figure 3.^{3/} A gradual recovery was made until, in 1936, 860 million board feet were produced. This remained the high point from that date until the present, as the demands of World War II, intense as they were, stimulated production only to a slight degree. The general trend during those war years was steadily downward. Some recovery was evident by 1946, but the 1947 and 1948 cuts were again lower.

Pulpwood

The greatest change in Florida's forest industry in the past 20 years has been the establishment and expansion of the pulp and paper industry in

^{3/} 1925-1946 data from U.S.D.A. Misc. Pub. No. 661, 1947 Production from Census of Manufactures - 1947, Bureau of the Census, 1948 Production - U. S. Forest Service.

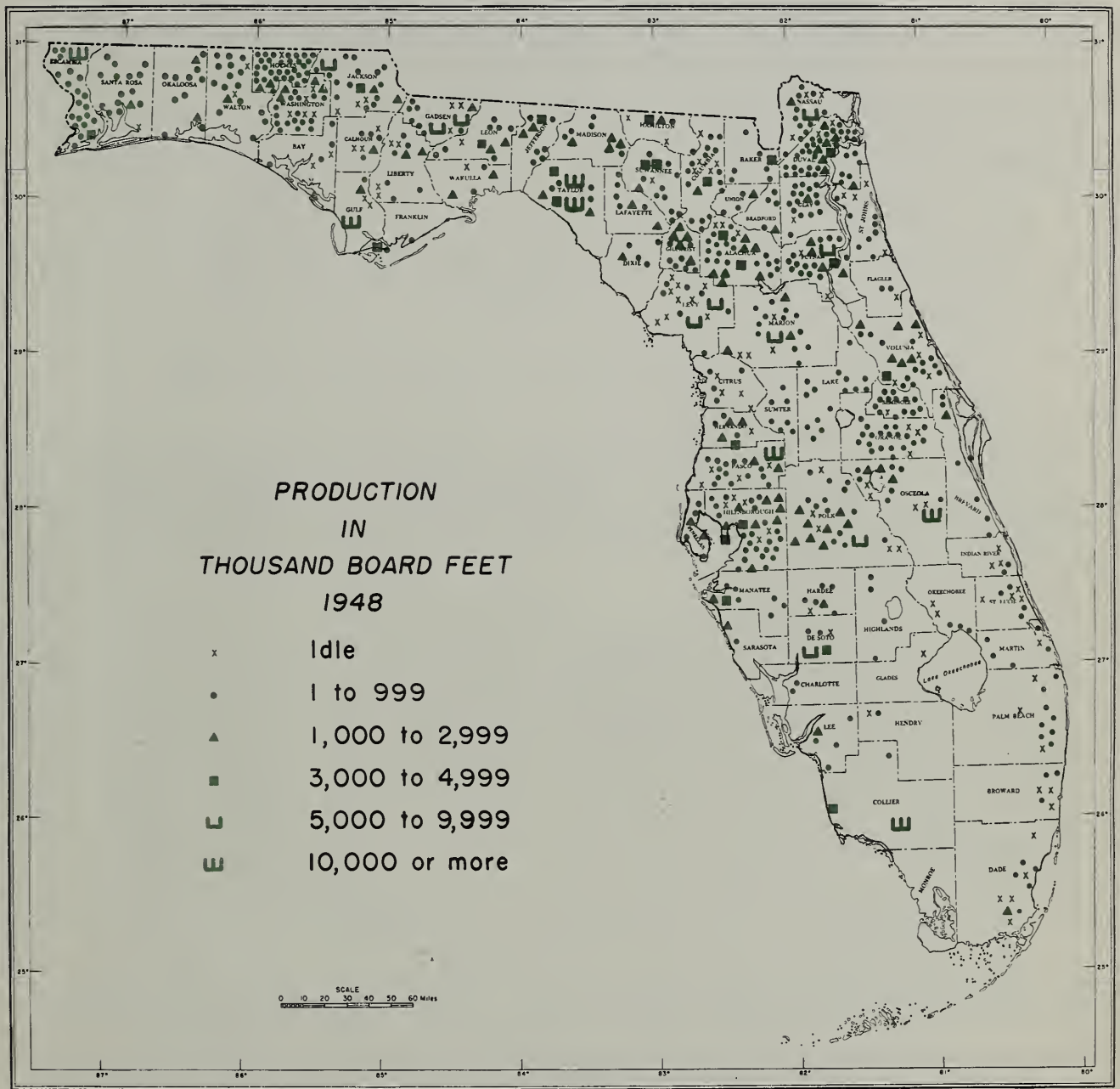


Figure 2.--Location and production class of sawmills, 1948

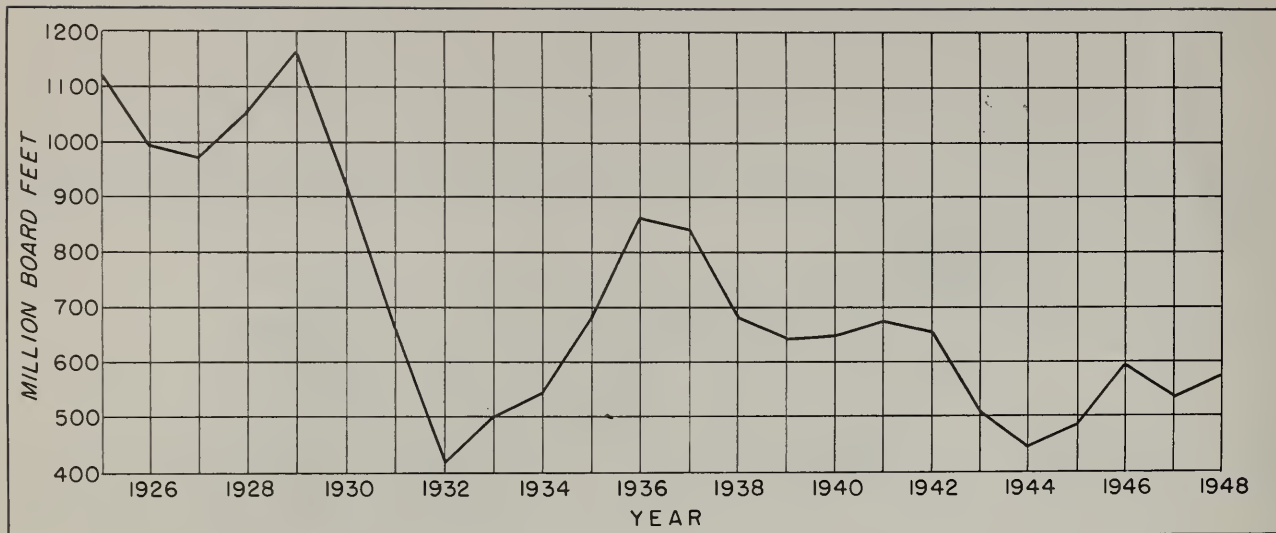


Figure 3.--Lumber production in Florida, 1925-1948

the State. The first Florida pulp mill went into production in 1931, followed by three in 1938, and increasing to a total of eight mills distributed across northern Florida in 1948. Annual pulpwood production more than doubled in the period 1939 through 1949 (fig. 4), and in 1948 totaled 1,221,000 cords.

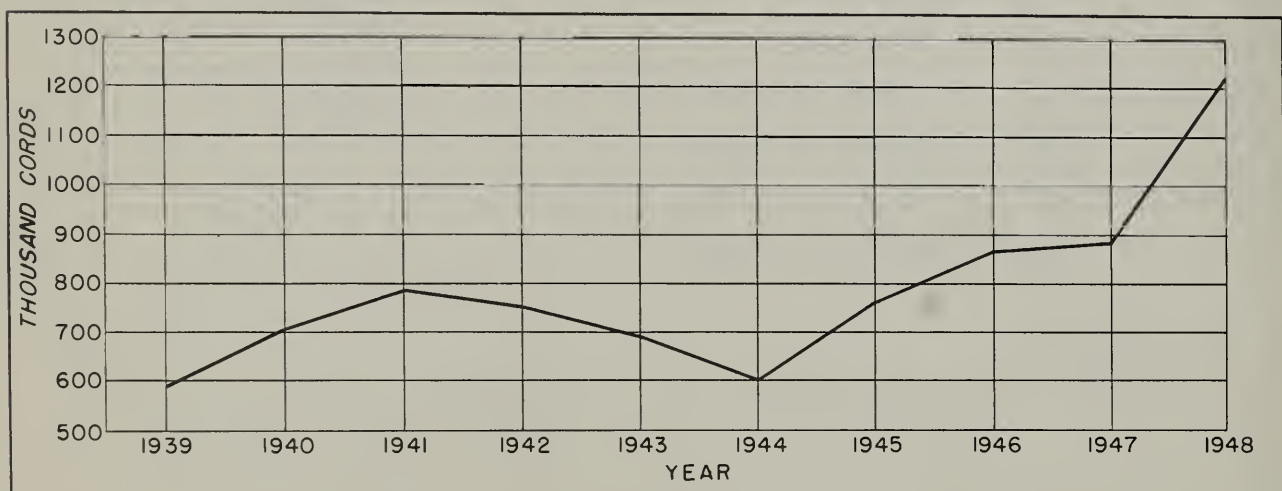


Figure 4.--Pulpwood production in Florida, 1939-1948

Veneer

Veneer logs and bolts cut in Florida totaled 86 million board feet in 1948. The 34 active plants in central and northern Florida (fig. 5) used 96 percent of the total. The rest went to seven veneer plants in Alabama and Georgia. Eighty-two percent of the volume was hardwood, mainly in the soft-textured hardwood group. Most of the remainder was pine.

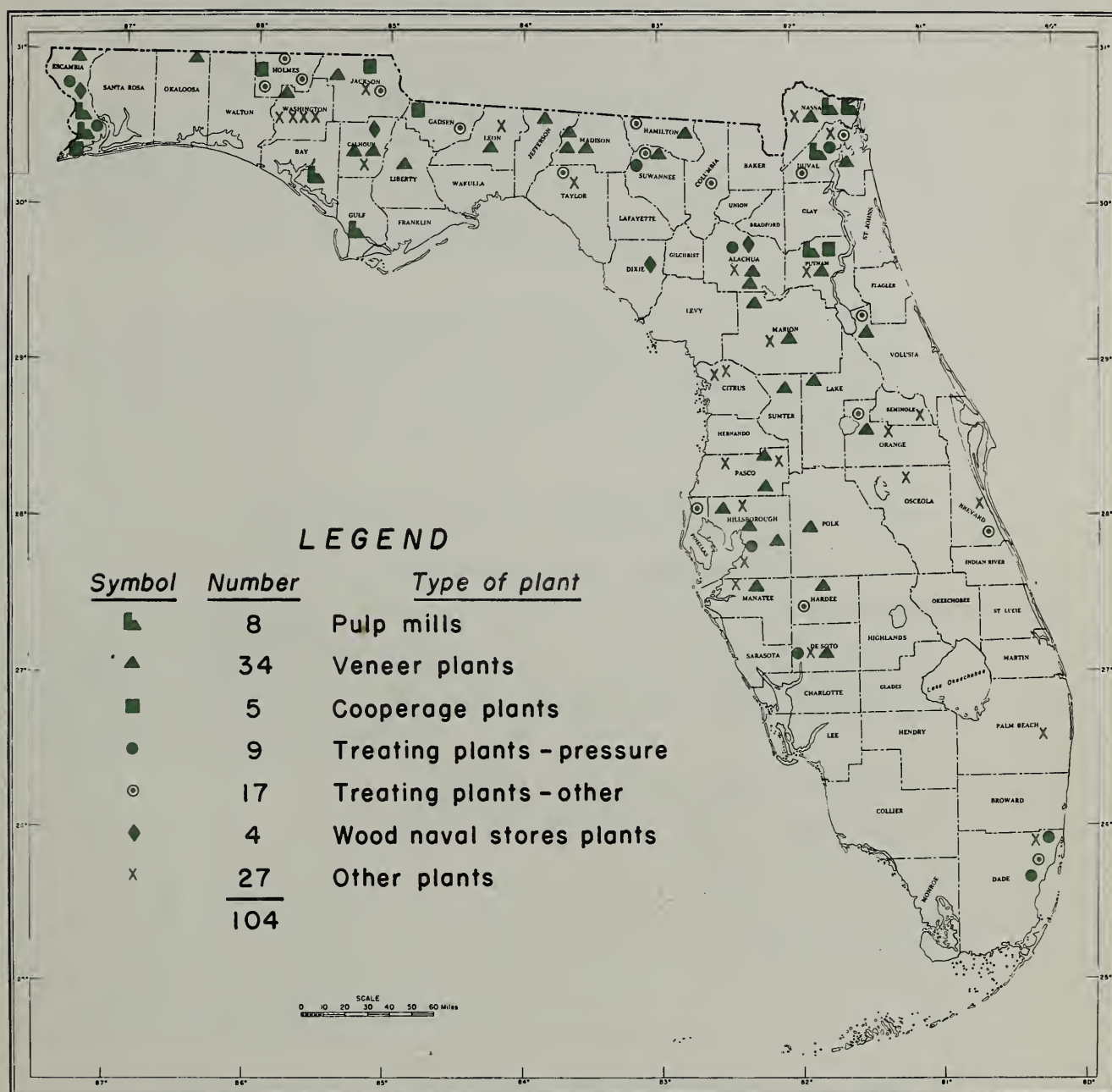


Figure 5.--Location of primary forest products plants, excluding sawmills, 1948

The 1948 production of veneer logs from Florida timber was one-third below the production reported by the Forest Survey in 1936, the year when the first complete survey was made by the Forest Service.

Fuel Wood, Fence Posts, and Farm Timbers

Fuel wood, fence posts, and farm timbers came from a wide range of materials (table 4). Since the greatest part of this timber was produced on farms for use by the farmer, the type of wood most readily available was usually the one chosen.

Only 13 percent of the 352,000 cords of fuel wood produced was cut from sound live trees of commercial species. Almost one-half was from dead material, mainly pine stumps, fallen branches, and dead trees. One-fourth of the fuel-wood production was from cull trees and scrub oak.

Table 4.--Kind of material used for fuel wood,
fence posts, and farm timbers

Material used	Product		
	Fuel-wood	Fence posts	Farm timbers
	Percent	Percent	Percent
Sound live trees 5 inches d.b.h. and larger	13	19	69
Sound saplings under 5 inches d.b.h.	(1/)	10	27
Cull trees and scrub oak	25	9	1
Dead material	48	60	3
Mill and logging waste	14	2	0
Total	100	100	100

1/ Less than one half of one percent.

Fuel-wood production in 1948 was only 27 percent of the 1936 production. Wood is still the most-used fuel for heating rural homes, but the use of other fuels is becoming common. A large proportion of the rural population now uses other fuels for cooking, and most tobacco farmers have converted to oil for tobacco curing.

Sixty percent of the 1,710,000 fence posts produced were cut from dead material, mainly dead heart pine and cypress. Only one-fifth of the total production was from sound live trees 5.0 inches d.b.h. or larger. The number of fence posts treated with creosote or other preservatives amounted to approximately 12 percent of the

total production in 1948. One-third of the treated posts were from trees under 5.0 inches d.b.h. Total production of fence posts in 1948 was 36 percent below the 1936 total.

Farm timbers included such items as sills and rafters for rough buildings, crop stack poles and poles for cattle pens. Florida's 1948 production of this material was very small, amounting to only one-fourth of one percent of the volume used for fuel wood.

Poles and Piling

Pole and piling production in 1948 was slightly over 400 thousand pieces, or two and one-fourth times the 1936 production. The accelerated demand for poles in the construction of rural electric transmission lines following the war, with greater use of smaller poles, accounted for the increase. Pine trees were used almost exclusively, and nearly all such poles were treated with preservative. The 1948 production was sent to 8 pressure wood-treating plants in Florida and 13 out-of-state plants. Almost half the total went to plants outside Florida.

The bulk of the poles and piling originated in northern Florida, centering around Suwannee County. One-fourth of the total production was from Suwannee County; and almost one-half came from this and adjoining counties. Escambia, Santa Rosa, and Nassau Counties were also important centers of production.

Hewn Cross Ties

During 1948, 1.4 million cross ties were hewn from Florida timber. Only 49,000 sawn ties were produced. Almost 80 percent of the hewn ties were pine, 12 percent were cypress, and oak and gum made up most of the remainder. Production was restricted mainly to northeastern Florida. Forty percent of the ties were cut in Marion, Alachua, Columbia, Levy, and Volusia Counties.

In common with all other forest products except pulpwood and poles, hewn tie production has decreased. Even with the good economic conditions prevailing in 1948, 59 percent fewer ties were hewn than in 1936.

Naval Stores

The total annual production of turpentine and rosin from crude gum and wood in the South has fluctuated very little since 1900. Production was highest from 1927 through 1938. Some decline occurred during World War II, but in the 1946-47 season the total production increased to 28.5 million gallons of turpentine and 2.2 million 500-pound barrels of rosin. In the period since 1920 the wood naval

stores industry has grown rapidly, while production from crude gum has declined. In fairly recent years the pulp industry has also started to produce sulfate turpentine as a by-product of the pulping process.

In 1920^{4/} over 90 percent of the turpentine and rosin produced in the United States was derived from crude gum. In the late thirties the proportion dropped below 80 percent, and in the 1946-1947 season it was below 50 percent. In that season 13.5 million barrels of turpentine were produced from crude gum, in contrast to 15.0 million ~~from~~ pulpwood and old-growth seasoned heartwood and stumps of longleaf and slash pine. In the naval stores year ending in March 1948, the national production of turpentine was from the following raw materials: crude gum 46 percent, dead pine wood 33 percent, and pulpwood 21 percent.

Data are not available to show the details of naval stores production trends in Florida by source of raw material. However, in 1922 the State accounted for 36 percent of the total production of gum naval stores; in 1948 only 22 percent. In this later year, production of turpentine from crude gum was 3.3 million gallons, compared to 8.3 million in 1922. This decline in production is reflected in the reduced number of trees being worked for turpentine. When the Forest Survey was made in Florida in 1934-1936, 36 million trees were faced; when the resurvey was made in 1948-1949, only 13 million were being worked. Production of crude gum has shifted more into Northeast Florida in the period between the two surveys, as three-fourths of the working trees are now located there. Only two-thirds of the working trees were in that area at the time of the first survey.

1948 production of pine stump wood, including a small amount of top wood, was over 700,000 tons. Production was spread over most of the State, although a rather small tonnage was shipped from South Florida. A considerable part of the total tonnage was shipped out of the State for processing.

Other Products

The 13 other minor timber products contributed only one percent to the cubic-foot volume of production in 1948. Cooperage and dimension stock lead the group, together making up three-fourths of the total.

Comparison with Total 1936 Production

In 1948 production of all primary forest products except pulpwood, poles, and piling was at a lower level than in 1936. The marked increase in the production of pulpwood, poles, and piling partially

^{4/} Statistical Abstract of the United States, U. S. Bureau of the Census.

made up for the volume decrease in other products; but the combined cubic-foot production in 1948, excluding naval stores, was approximately three-fourths what it had been in 1936.

COMMODITY DRAIN

Commodity drain^{5/} is the volume of sound live timber removed as forest products, plus the merchantable volume cut but not utilized, plus the volume of sound trees destroyed in logging operations. In 1948 the volume of timber, determined through surveys of production and woods utilization, in each of these categories was as follows:

	<u>Volume in million cubic feet</u>	<u>Percent</u>
Trees cut:		
Volume used for forest products	215.7	93.2
Merchantable volume left in woods	14.1	6.1
Merchantable trees destroyed in logging	<u>1.7</u>	<u>0.7</u>
Total commodity drain	231.5	100.0

By converting production to commodity drain in this way, the volume of timber cut and that destroyed in logging is based upon the same standards as were used in the inventory^{6/} of standing timber.

^{5/} Commodity drain in board feet includes the volume removed from the growing stock in the sawlog portion of softwood trees 9.0 inches d.b.h. and larger, and hardwood trees 11.0 inches d.b.h. and larger.

Commodity drain in cubic feet and standard cords includes the volume removed from the growing stock in all sound trees 5.0 inches d.b.h. and larger measured to a 4.0-inch top inside bark.

^{6/} Refer to the following Forest Survey Releases by J. F. McCormack, Southeastern Forest Experiment Station:

- No. 30. Forest Resources of Northeast Florida, 36 pp. illus.
1949
- No. 31. Forest Resources of Central Florida, 36 pp., illus.
1949
- No. 32. Forest Resources of Northwest Florida, 36 pp., illus.
1950
- No. 33. Forest Resources of South Florida, 21 pp., illus.
1950

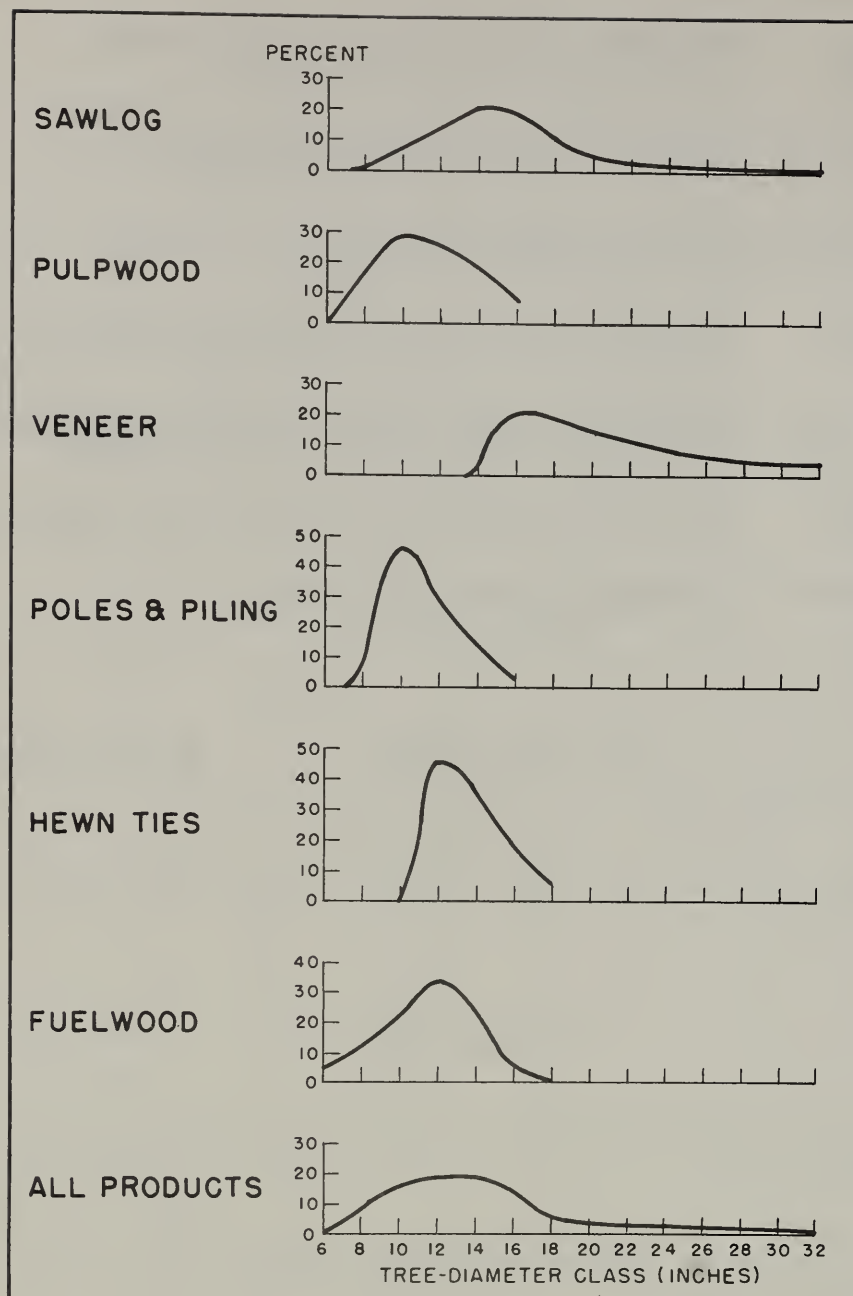


Figure 7.--Distribution of commodity drain by tree-diameter class

Drain by Species Group

The dependence of Florida's forest industries on pines is shown by the fact that 81 percent of the cubic-foot drain was from these species in 1948. The distribution of commodity drain on sound live trees of commercial species is summarized below:

<u>Species group</u>	<u>Million cu. ft.</u>	<u>Percent</u>
Pine	186.5	80.5
Cypress and cedar	19.4	8.4
Gums, bay, magnolia, maple, and other soft hardwoods	21.1	9.1
Oaks, ash, sycamore, beech, and other hard hardwoods	<u>4.5</u>	<u>2.0</u>
Total	231.5	100.0

In relation to the volume of available growing stock, the pines are also being cut more heavily than the hardwoods. In 1948 nearly six percent (table 6) of the board-foot volume of pine in the State was cut, in contrast to less than three percent of the cypress and hardwood. The drain on all sound pines 5.0 inches d.b.h. and larger was 4.5 percent of the growing stock volume, measured in cubic feet. This compares with slightly over one percent for the hardwoods.

Table 6.--Percent of the growing stock^{1/} removed as
commodity drain, 1948

Kind of growing stock	Pine	Cypress and cedar	Hardwood	All species
Saw timber ^{2/}	5.8	2.9	2.4	4.6
Sound trees 5.0 inches d.b.h. and larger:				
Measured in cubic feet	4.5	1.6	1.3	3.1
Measured in cords	3.7	1.4	1.1	2.7

^{1/} The net volume of sound live trees of commercial species on commercial forest land.

^{2/} The board-foot volume of pine, cypress, and cedar 9.0 inches d.b.h. and larger; hardwood 11.0 inches d.b.h. and larger.

Comparing the total commodity drain of pine with the sound growing stock, by county, reveals a number of areas in which the drain intensity is very high (fig. 8). These are Osceola, Duval, Suwannee, Monroe, Pasco, Seminole, and Hernando Counties. In Osceola and Duval the drain was 105 cords per thousand cords of growing stock (table 13), which is probably two to three times the amount of growth. Later studies of increment rates may show that heavy drain can be supported in some areas. On the other hand, a low drain-to-growing stock relationship does not necessarily indicate conservative cutting. In some areas it merely indicates that the pine timber is in such light stands per acre that cutting is impractical.

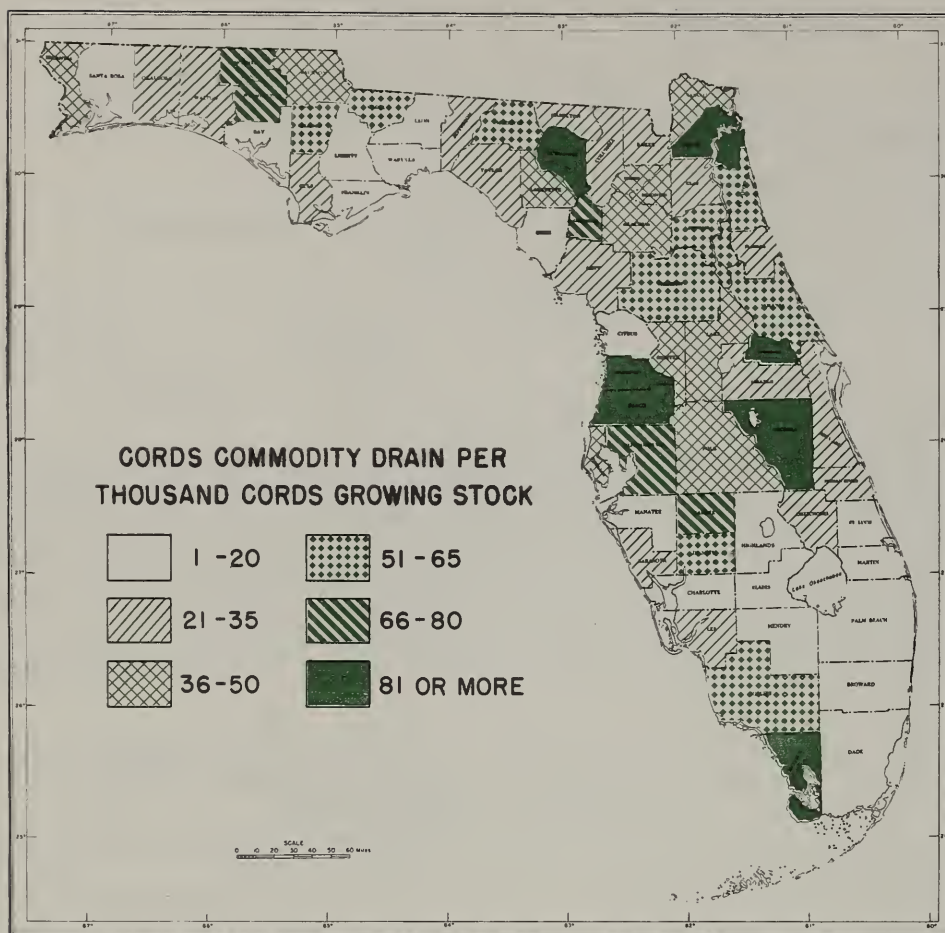


Figure 8.--Cords of pine commodity drain per thousand cords of pine growing stock, 1948

Drain by Forest Product

Sawlogs and pulpwood together account for nearly 80 percent of the cubic-foot drain on all species (fig. 9). Veneer logs are the next most important item of drain, followed by hewn ties. The drain of pine for pulpwood exceeds that for lumber; these two products, together with hewn cross ties, total 91 percent of the pine drain. Cypress is cut almost exclusively for sawlogs and hewn cross ties, while the gums, bay, and magnolia are chiefly cut into veneer. The hard hardwoods, mostly red and white oaks, are used for lumber, hewn ties, fuel wood, and a small amount of veneer.

Of the total board-foot drain, 42 percent was caused by the cutting of pine sawlogs (table 11), whereas 38 percent of the total drain on all trees 5.0 inches d.b.h. and larger was caused by the cutting of pine pulpwood (table 12).

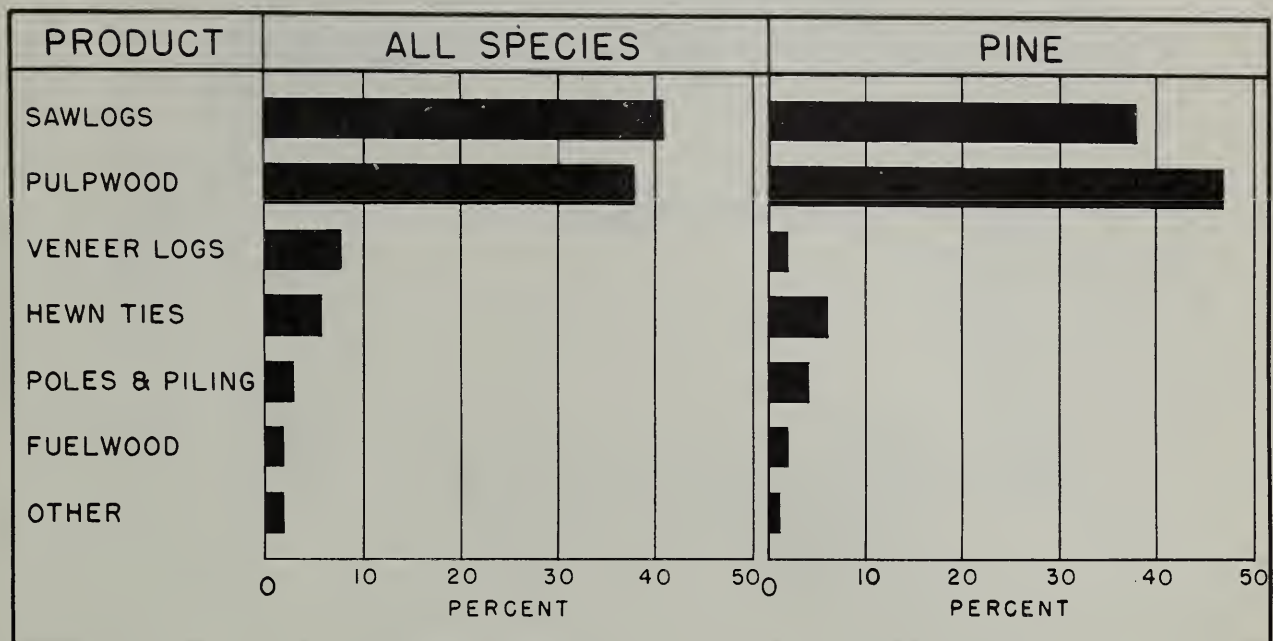


Figure 9.--Drain on pine and all species, for different timber products, 1948. Percentages refer to cubic-foot volume.

Geographic Source of Commodity Drain

The commodity drain of pine was well distributed over the State, with the highest concentration in the Northeast (fig. 10). Marion County led all the other counties in the State with a total pine drain of 153,300 cords (table 17). Drain was also high in Duval, a smaller county, where it amounted to 100,300 cords. Cypress and cedar (predominantly cypress) came mainly from the Big Cypress Swamp in Collier County, where old-growth timber was being cut. Most of the rest of the cypress drain was from Lake and Volusia Counties along the St. Johns River and in Gulf and Liberty Counties along the Apalachicola River. Hardwood drain was chiefly from the Hillsborough County area and the river bottomlands of northern Florida.

Pulpwood cutting was restricted largely to the northern part of the State (fig. 11), with the highest concentration in the Northeast. Sawlog drain was spread fairly evenly except in the sparsely timbered counties of the Southeast. The drain pattern resulting from the production of all forest products closely parallels that of sawlog drain, although the intensity is much greater.

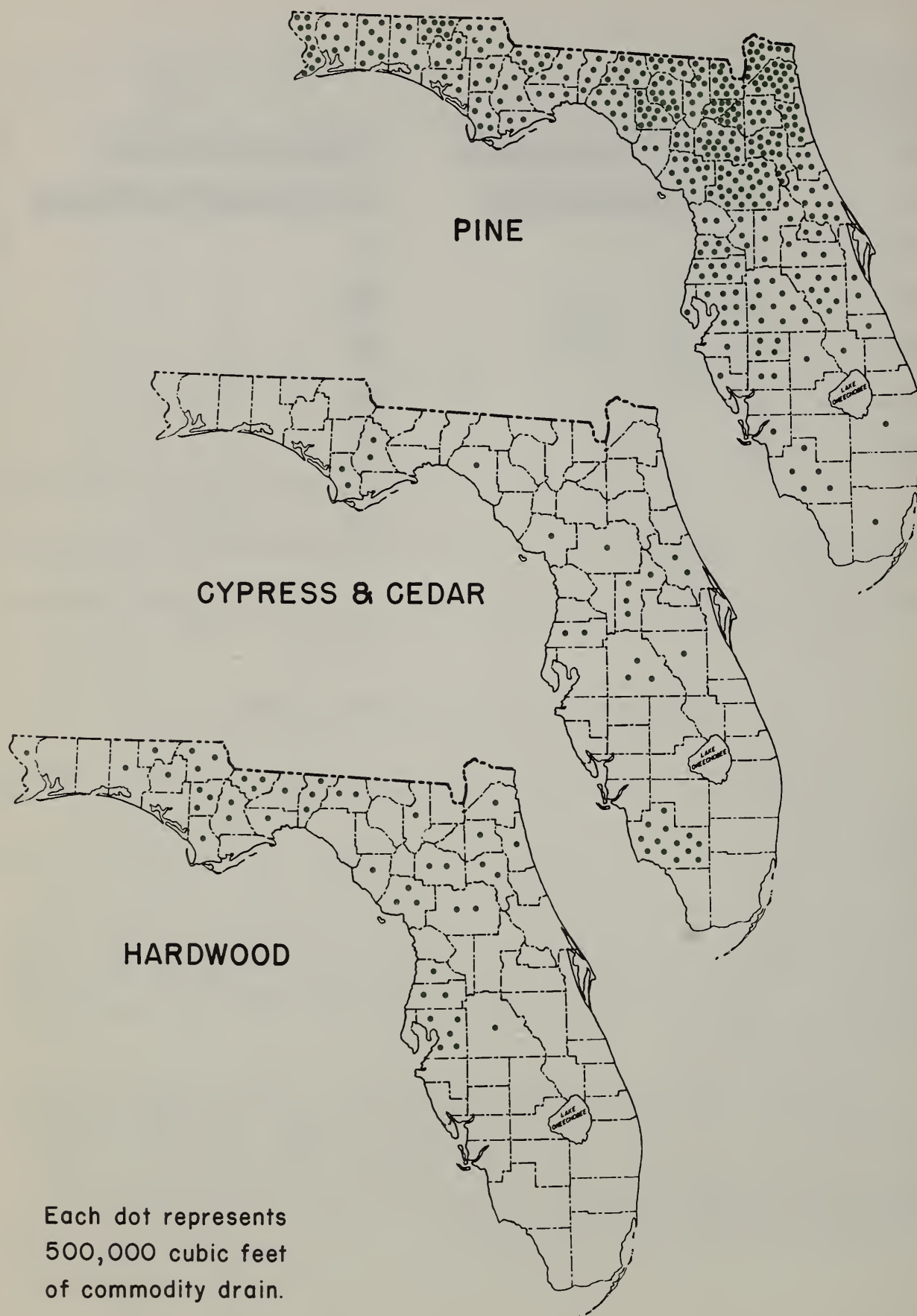


Figure 10.--Origin of commodity drain by species group, 1948

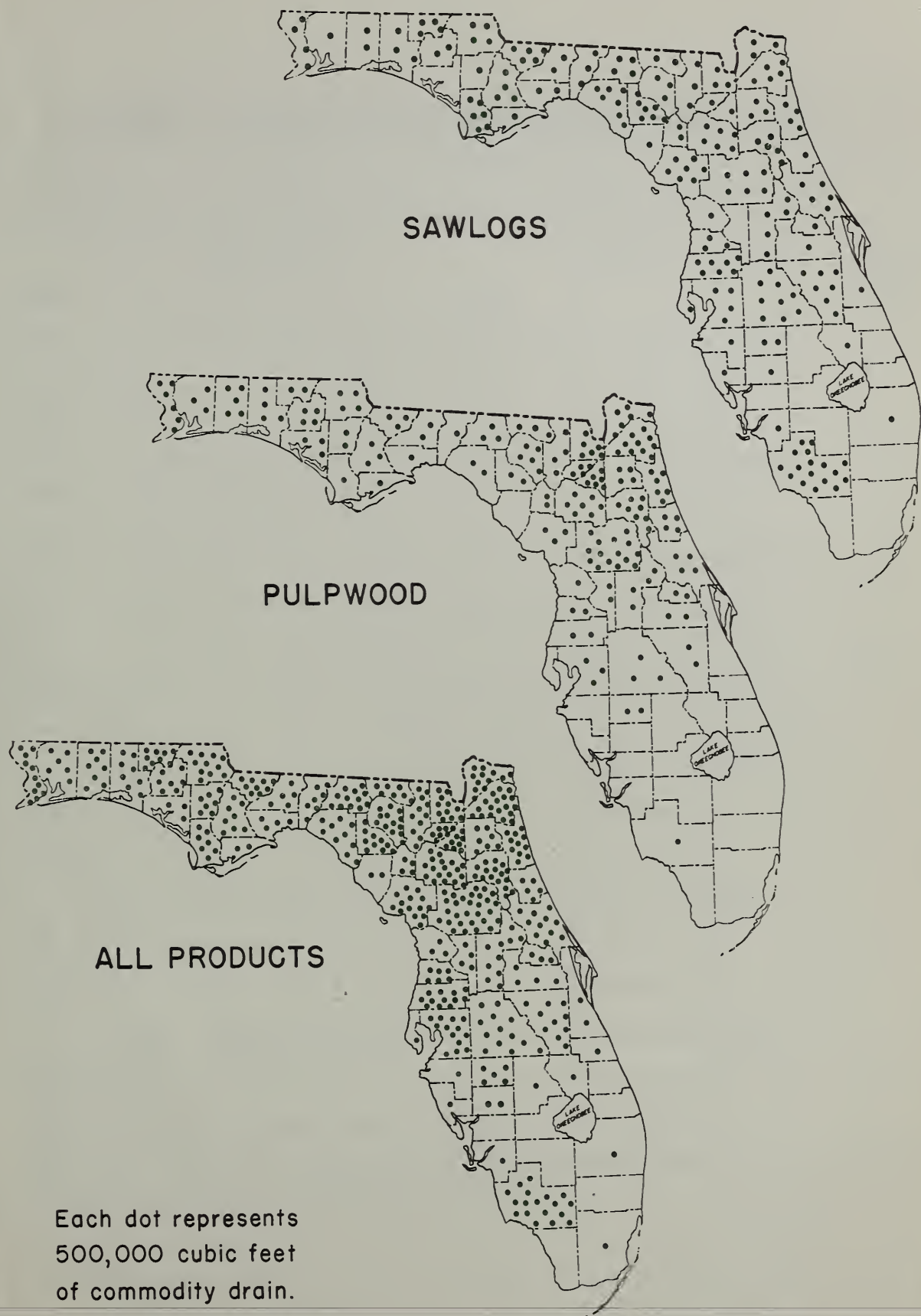


Figure 11.--Origin of sawlog, pulpwood, and total commodity drain, 1948

APPENDIX

This section contains tables on the following subjects:

<u>Table number</u>	<u>Title</u>	<u>Page</u>
7	Production of primary forest products, 1948 - - - -	21
8	Lumber production by county, 1948 - - - - - - - -	22
9	Pulpwood production by county, 1948 - - - - - - - -	23
10	Distribution of commodity drain by tree-diameter class, 1948 - - - - - - - - - - - - - - - - - -	24
11	Distribution of commodity drain in board feet by product and species group, 1948 - - - - - - - - - -	25
12	Distribution of commodity drain in cubic feet by product and species group, 1948 - - - - - - - - - -	25
13	Cords of commodity drain per thousand cords of sound growing stock, 1948 - - - - - - - - - - - -	26
	Commodity drain of all species by county and product, 1948	
14	In board feet - - - - - - - - - - - - - - - -	27
15	In standard cords - - - - - - - - - - - - - - -	28
	Commodity drain of pine by county and product, 1948	
16	In board feet - - - - - - - - - - - - - - - -	29
17	In standard cords - - - - - - - - - - - - - - -	30
	Commodity drain by county and species group, 1948	
18	In board feet - - - - - - - - - - - - - - - -	31
19	In cubic feet - - - - - - - - - - - - - - - -	32
20	In standard cords - - - - - - - - - - - - - - -	33

Table 7.--Production of primary forest products, 1948

Product	Cubic volume	Standard unit	Softwood	Hardwood	Total
	<u>Thousand cu. ft.</u>		<u>Number</u>	<u>Number</u>	<u>Number</u>
Sawlogs	88,820	M bd. ft. ^{1/}	515,000	31,900	546,900
Veneer bolts	13,590	M bd. ft. ^{1/}	15,450	70,750	86,200
Cooperage bolts	1,640	M bd. ft. ^{1/}	10,450	50	10,500
Pulpwood	96,960	Standard cord	1,220,000	1,200	1,221,200
Fuel wood	28,400	Standard cord	189,900	161,800	351,700
Naval stores stumps	39,560	Ton	741,800	0	741,800
Piling	740	Linear foot	964,900	83,600	1,048,500
Poles	5,330	Piece	373,200	0	373,200
Posts	1,120	Piece	1,449,800	260,600	1,710,400
Hewn cross ties	8,340	Piece	1,279,100	123,000	1,402,100
Dimension bolts	710	Standard cord	7,300	1,000	8,300
Excelsior wood	30	Standard cord	300	0	300
Shingles	20	Square	1,200	0	1,200
Handle bolts	60	M bd. ft. ^{1/}	300	100	400
Lath	120	Thousand pieces	3,700	0	3,700
Shuttle blocks	10	Standard cord	0	200	200
Farm timbers	70	M cu. ft.	60	10	70
Other ^{2/}	500	M bd. ft. ^{1/}	2,100	1,300	3,400
All products	286,020	--	--	--	--

^{1/} Thousands of board feet International 1/4" Rule.

^{2/} Other includes: cedar cants, pencil stock, ski stock, plugs for roll paper, tomato stakes, and cypress lawn furniture.

Table 8.--Lumber production by county, 1948

(In thousand board feet)

County	Softwoods	Hardwoods	Total	County	Softwoods	Hardwoods	Total
Alachua	23,222	366	23,588	Lake	3,210	5	3,215
Baker	6,254	--	6,254	Lee	2,740	--	2,740
Bay	1,406	25	1,431	Leon	6,704	1,385	8,089
Bradford	2,532	--	2,532	Levy	10,731	--	10,731
Brevard	4,129	--	4,129	Liberty	5,791	255	6,046
Broward	283	--	283	Madison	7,490	12	7,502
Calhoun	2,700	561	3,261	Manatee	5,885	210	6,095
Charlotte	1,370	--	1,370	Marion	20,659	3,076	23,735
Citrus	514	6	520	Martin	1,334	--	1,334
Clay	3,526	30	3,556	Monroe	--	--	--
Collier	15,826	--	15,826	Nassau	10,052	38	10,090
Columbia	8,727	374	9,101	Okaloosa	5,726	245	5,971
Dade	1,446	4	1,450	Okeechobee	253	--	253
De Soto	9,938	--	9,938	Orange	3,427	9	3,436
Dixie	1,665	--	1,665	Osceola	21,962	241	22,203
Duval	24,667	66	24,733	Palm Beach	687	--	687
Escambia	24,883	1,251	26,134	Pasco	17,570	40	17,610
Flagler	1,064	--	1,064	Pinellas	2,905	--	2,905
Franklin	4,270	810	5,080	Polk	24,253	298	24,551
Gadsden	12,191	6,236	18,427	Putnam	15,930	4,526	20,456
Gilchrist	10,650	132	10,782	St. Johns	2,019	--	2,019
Glades	--	--	--	St. Lucie	504	--	504
Gulf	17,244	1,693	18,937	Santa Rosa	3,297	32	3,329
Hamilton	4,975	--	4,975	Sarasota	1,062	--	1,062
Hardee	2,164	410	2,574	Seminole	1,847	50	1,897
Hendry	128	--	128	Sumter	1,418	--	1,418
Hernando	8,825	716	9,541	Suwannee	10,692	114	10,806
Highlands	626	--	626	Taylor	75,280	39	75,319
Hillsborough	23,337	40	23,377	Union	2,457	40	2,497
Holmes	7,092	910	8,002	Volusia	13,835	21	13,856
Indian River	445	--	445	Wakulla	2,593	348	2,941
Jackson	7,058	5,774	12,832	Walton	4,195	523	4,718
Jefferson	7,687	132	7,819	Washington	8,099	1,113	9,212
Lafayette	3,139	--	3,139	TOTAL	538,590	32,156	570,746

Table 9.--Pulpwood production by county, 1948

County	Cords	County	Cords
Alachua	47,833	Lake	25,036
Baker	41,859	Lee	2,064
Bay	18,361	Leon	12,836
Bradford	43,609	Levy	23,952
Brevard	3,299	Liberty	20,671
Broward	--	Madison	23,393
Calhoun	16,788	Manatee	2,176
Charlotte	72	Marion	105,404
Citrus	5,071	Martin	15
Clay	25,127	Monroe	--
Collier	5,915	Nassau	41,511
Columbia	28,350	Okaloosa	32,110
Dade	1,028	Okeechobee	2,557
De Soto	2,871	Orange	11,579
Dixie	3,393	Osceola	13,945
Duval	67,872	Palm Beach	--
Escambia	40,075	Pasco	12,538
Flagler	24,245	Pinellas	1,258
Franklin	4,830	Polk	21,707
Gadsden	19,092	Putnam	56,708
Gilchrist	11,537	St. Johns	39,797
Glades	14	St. Lucie	--
Gulf	9,951	Santa Rosa	24,060
Hamilton	23,911	Sarasota	149
Hardee	16,268	Seminole	11,623
Hendry	35	Sumter	11,974
Hernando	10,554	Suwannee	33,232
Highlands	1,692	Taylor	11,318
Hillsborough	22,131	Union	29,605
Holmes	15,546	Volusia	29,857
Indian River	2,810	Wakulla	7,805
Jackson	25,016	Walton	27,545
Jefferson	8,726	Washington	25,678
Lafayette	11,204	TOTAL	1,221,188

Table 10.-Distribution of commodity drain by tree-diameter class, 1948^{1/}

(In percent)

Tree-diameter class	Sawlogs	Pulpwood	Veneer	Poles & piling	Hewn cross ties	Fuel- wood	All products
(Inches)							
6	--	1	--	--	--	4	1
8	1	19	--	9	--	12	8
10	9	29	--	46	--	22	17
12	14	22	--	28	46	34	19
14	21	21	5	15	21	25	19
16	20	8	21	2	27	--	15
18	10	--	12	--	6	3	5
20	6	--	15	--	--	--	4
22+	19	--	47	--	--	--	12
All diameters	100	100	100	100	100	100	100

^{1/} Volume of sound trees destroyed in logging not included.

Table 11.--Distribution of commodity drain in board feet, by product and species group, 1948

Product	Pine	Cypress and cedar	Hardwood	All species
	<u>Percent</u>	<u>Percent</u>	<u>Percent</u>	<u>Percent</u>
Sawlogs	42.5	8.9	3.5	54.9
Pulpwood	23.4	0.0	(<u>1</u> /)	23.4
Veneer	1.5	0.1	7.5	9.1
Hewn cross ties	4.7	0.8	0.5	6.0
Poles and piling	3.1	(<u>1</u> /)	0.1	3.2
Fuel wood	1.1	0.0	0.3	1.4
Other	1.6	0.2	0.2	2.0
All products	77.9	10.0	12.1	100.0

Table 12.--Distribution of commodity drain in cubic feet, by product and species group, 1948

Product	Pine	Cypress and cedar	Hardwood	All species
	<u>Percent</u>	<u>Percent</u>	<u>Percent</u>	<u>Percent</u>
Sawlogs	30.9	7.3	2.8	41.0
Pulpwood	38.1	0.0	(<u>1</u> /)	38.1
Veneer	1.3	0.1	7.1	8.5
Hewn cross ties	4.6	0.8	0.5	5.9
Poles and piling	3.0	(<u>1</u> /)	0.1	3.1
Fuel wood	1.3	0.0	0.4	1.7
Other	1.3	0.2	0.2	1.7
All products	80.5	8.4	11.1	100.0

1/ Less than one-tenth of one percent.

Table 13.--Cords of commodity drain per thousand cords of sound growing stock, 1948

County	Product			All products	
	Sawlogs	Pulpwood	Other	Pine	All species
Alachua	12	16	11	48	39
Baker	5	12	2	24	19
Bay	2	10	(1/)	16	12
Bradford	5	31	4	50	40
Brevard	14	7	2	24	23
Broward	12	--	5	7	17
Calhoun	5	12	15	52	32
Charlotte	7	(1/)	(1/)	10	7
Citrus	3	4	6	19	13
Clay	10	14	4	32	28
Collier	45	3	(1/)	58	48
Columbia	4	7	6	22	17
Dade	10	3	1	14	14
De Soto	14	6	13	63	33
Dixie	2	1	3	10	6
Duval	17	36	9	105	62
Escambia	10	18	5	36	33
Flagler	1	9	1	23	11
Franklin	4	3	(1/)	14	7
Gadsden	21	13	6	52	40
Gilchrist	17	18	5	75	40
Glades	1	(1/)	(1/)	2	1
Gulf	20	6	1	31	27
Hamilton	5	11	5	29	21
Hardee	15	22	5	72	42
Hendry	3	(1/)	(1/)	4	3
Hernando	17	9	7	82	33
Highlands	2	2	(1/)	7	4
Hillsborough	18	17	29	69	64
Holmes	14	9	11	73	34
Indian River	4	10	1	23	15
Jackson	9	9	8	48	26
Jefferson	5	3	7	25	15
Lafayette	19	5	6	41	30
Lake	19	16	6	46	41
Lee	5	3	1	22	9
Leon	4	5	3	13	12
Levy	9	5	6	35	20
Liberty	7	6	1	15	14
Madison	10	10	12	53	32
Manatee	6	4	2	15	12
Marion	11	32	15	64	58
Martin	8	(1/)	1	10	9
Monroe	(1/)	--	2	104	2
Nassau	6	15	7	41	28
Okaloosa	7	18	5	35	30
Okeechobee	9	4	(1/)	21	13
Orange	5	7	2	26	14
Osceola	28	9	1	105	38
Palm Beach	16	--	1	17	17
Pasco	39	12	16	88	67
Pinellas	32	10	1	49	43
Polk	20	8	3	49	31
Putnam	13	22	7	57	42
St. Johns	12	21	6	51	39
St. Lucie	2	--	(1/)	5	2
Santa Rosa	1	7	3	13	11
Sarasota	19	(1/)	1	21	20
Seminole	7	20	2	88	29
Sumter	2	8	7	43	17
Suwannee	17	32	32	104	81
Taylor	11	3	2	23	16
Union	5	20	5	46	30
Volusia	10	11	6	59	27
Wakulla	5	4	2	10	11
Walton	6	10	3	32	19
Washington	8	19	8	67	35
State	10	11	6	37	27

1/ Less than one-half cord commodity drain per thousand cords growing stock.

Table 14.--Commodity drain of all species, by county and product, 1948

(In thousand board feet)

County	Sawlogs	Pulpwood	Veneer bolts	Poles and piling	Hewn cross ties	Fuelwood	Other	All products
Alachua	17,866	8,611	4,830	493	4,481	516	65	36,862
Baker	9,264	7,536	286	41	1,807	108	116	19,158
Bay	1,319	3,305	--	--	--	164	--	4,788
Bradford	3,155	7,851	516	627	571	237	--	12,957
Brevard	2,980	594	--	27	167	25	--	3,793
Broward	265	--	--	5	71	12	--	353
Calhoun	3,278	3,022	4,705	--	261	247	1,691	13,204
Charlotte	806	13	--	--	--	4	--	823
Citrus	1,644	913	1,384	--	951	8	222	5,122
Clay	7,885	4,524	1,047	91	450	64	429	14,490
Collier	43,877	1,065	--	--	--	8	--	44,950
Columbia	7,564	5,104	2,334	892	4,492	301	5	20,692
Dade	1,336	185	--	36	--	44	--	1,601
De Soto	2,937	517	957	386	22	17	659	5,495
Dixie	2,191	611	115	570	1,277	43	375	5,182
Duval	14,749	12,218	2,051	302	2,505	237	194	32,256
Escambia	9,998	7,214	432	2,132	--	659	--	20,435
Flagler	1,886	4,365	--	108	1,041	43	--	7,443
Franklin	3,179	869	--	--	--	83	--	4,131
Gadsden	14,086	3,437	1,166	60	497	783	28	20,057
Gilchrist	5,045	2,077	135	135	525	129	--	8,046
Glades	102	3	--	--	51	8	--	164
Gulf	15,646	1,791	249	--	--	41	83	17,810
Hamilton	5,287	4,305	638	1,144	1,432	216	11	13,033
Hardee	5,103	2,928	895	22	--	44	310	9,302
Hendry	939	6	--	--	--	4	--	949
Hernando	9,649	1,900	1,858	--	1,016	21	182	14,626
Highlands	655	305	--	56	43	8	--	1,067
Hillsborough	10,879	3,984	11,707	17	175	182	459	27,403
Holmes	10,946	2,799	588	222	194	741	4,973	20,463
Indian River	552	506	--	--	11	25	--	1,094
Jackson	10,684	4,503	2,505	697	397	1,401	1,758	21,945
Jefferson	7,243	1,571	5,092	2	1,221	495	4	15,628
Lafayette	19,241	2,017	78	2,972	681	64	3	25,056
Lake	12,236	4,507	410	677	1,679	57	--	19,566
Lee	1,682	372	--	183	23	20	--	2,280
Leon	4,362	2,311	1,663	2	256	536	16	9,146
Levy	18,918	4,312	2,128	728	4,144	216	972	31,418
Liberty	11,113	3,721	1,457	--	134	82	--	16,507
Madison	11,128	4,211	4,536	1,295	3,094	216	--	24,480
Manatee	1,669	392	206	--	--	28	232	2,527
Marion	16,283	18,975	8,976	254	5,423	430	1,438	51,779
Martin	785	3	--	7	49	12	--	856
Monroe	4	--	--	--	32	4	--	40
Nassau	8,501	7,473	782	3,091	1,791	129	271	22,038
Okaloosa	6,267	5,780	494	871	986	453	--	14,851
Okeechobee	2,672	460	--	--	--	8	--	3,140
Orange	4,043	2,084	483	--	380	48	--	7,038
Osceola	20,188	2,510	194	--	25	17	204	23,138
Palm Beach	2,546	--	--	7	--	33	--	2,586
Pasco	18,756	2,257	5,220	143	226	36	264	26,902
Pinellas	1,982	226	--	10	--	33	--	2,251
Polk	24,235	3,908	1,424	138	209	175	264	30,353
Putnam	14,942	10,209	3,350	103	1,271	193	1,254	31,322
St. Johns	10,676	7,164	1,841	309	1,144	108	522	21,764
St. Lucie	580	--	--	--	--	8	--	588
Santa Rosa	2,104	4,331	536	2,351	--	618	58	9,998
Sarasota	3,205	27	--	--	--	8	155	3,395
Seminole	1,870	2,092	291	5	--	29	--	4,287
Sumter	1,290	2,156	2,281	--	1,003	36	--	6,766
Suwannee	8,284	5,983	303	7,333	2,334	495	3	24,735
Taylor	18,974	2,037	883	426	1,363	108	79	23,870
Union	3,295	5,330	379	--	1,577	129	77	10,787
Volusia	12,233	5,375	175	309	3,921	409	--	22,422
Wakulla	4,990	1,405	1,271	--	--	206	16	7,888
Walton	7,400	4,959	1,502	348	28	576	--	14,813
Washington	5,339	4,623	885	--	434	536	1,700	13,517
State	514,788	219,842	85,238	29,627	55,865	12,974	19,092	937,426

Table 15.--Commodity drain of all species by county and product, 1948

(In standard cords)

County	Sawlogs	Pulpwood	Veneer bolts	Poles and piling	Hewn cross ties	Fuelwood	Other	All products
Alachua	34,700	43,500	13,200	1,500	12,500	1,900	500	107,800
Baker	18,000	38,100	800	100	5,000	400	300	62,700
Bay	2,500	16,700	--	--	--	700	(1/)	19,900
Bradford	6,100	39,700	1,400	1,800	1,600	900	100	51,600
Brevard	5,700	3,000	--	100	500	100	(1/)	9,400
Broward	600	--	--	(1/)	200	(1/)	(1/)	800
Calhoun	6,500	15,300	13,000	--	700	1,000	4,200	40,700
Charlotte	1,600	100	--	--	--	(1/)	(1/)	1,700
Citrus	3,300	4,600	3,700	--	2,600	(1/)	600	14,800
Clay	15,500	22,900	2,800	300	1,300	300	900	44,000
Collier	95,700	5,400	--	--	--	(1/)	(1/)	101,100
Columbia	14,800	25,800	6,400	2,600	12,500	1,200	400	63,700
Dade	2,600	900	--	100	--	200	(1/)	3,800
De Soto	5,600	2,600	2,600	1,100	100	100	1,600	13,700
Dixie	4,300	3,100	300	1,700	3,600	100	900	14,000
Duval	28,700	61,800	5,400	900	7,000	900	500	105,200
Escambia	19,600	36,400	1,200	6,300	--	2,600	100	66,200
Flagler	3,700	22,100	--	300	2,900	200	(1/)	29,200
Franklin	6,200	4,400	--	--	--	300	(1/)	10,900
Gadsden	28,400	17,300	3,200	200	1,400	3,100	200	53,800
Gilchrist	9,700	10,500	400	400	1,500	500	(1/)	23,000
Glades	200	(1/)	--	--	200	(1/)	(1/)	400
Gulf	32,100	9,100	700	--	--	200	100	42,200
Hamilton	10,200	21,700	1,800	3,400	4,000	900	100	42,100
Hardee	9,900	14,800	2,400	100	--	100	800	28,100
Hendry	1,900	(1/)	--	--	--	(1/)	(1/)	1,900
Hernando	18,700	9,600	5,000	--	2,800	100	500	36,700
Highlands	1,300	1,500	--	200	100	(1/)	(1/)	3,100
Hillsborough	21,300	20,100	32,300	100	400	700	1,200	76,100
Holmes	21,600	14,200	1,600	600	500	3,000	10,700	52,200
Indian River	1,000	2,600	--	--	(1/)	100	(1/)	3,700
Jackson	21,600	22,800	6,900	2,100	1,100	5,600	4,000	64,100
Jefferson	14,000	7,900	14,100	(1/)	3,400	2,000	100	41,500
Lafayette	37,100	10,200	200	8,800	1,900	200	(1/)	58,400
Lake	27,000	22,800	1,100	2,200	4,600	200	(1/)	57,900
Lee	3,300	1,900	--	500	100	100	(1/)	5,900
Leon	8,500	11,700	4,600	(1/)	700	2,100	100	27,700
Levy	37,700	21,800	5,800	2,200	11,500	800	2,300	82,100
Liberty	23,600	18,800	4,100	--	300	300	(1/)	47,100
Madison	21,500	21,300	12,500	3,800	8,600	800	100	68,600
Manatee	3,200	2,000	600	--	--	100	600	6,500
Marion	31,900	95,900	23,800	800	15,100	1,700	3,600	172,800
Martin	1,500	(1/)	--	(1/)	200	(1/)	(1/)	1,700
Monroe	(1/)	--	--	--	100	(1/)	(1/)	100
Nassau	16,500	37,800	2,100	9,100	5,000	500	700	71,700
Okaloosa	12,100	29,200	1,400	2,600	2,800	1,800	(1/)	49,900
Okeechobee	5,200	2,300	--	--	--	(1/)	(1/)	7,500
Orange	7,900	10,600	1,300	--	1,100	200	(1/)	21,100
Osceola	39,700	12,700	500	--	100	100	500	53,600
Palm Beach	4,900	--	--	(1/)	--	200	(1/)	5,100
Pasco	38,000	11,400	14,200	400	600	200	600	65,400
Pinellas	3,900	1,200	--	(1/)	--	100	(1/)	5,200
Polk	49,000	19,800	3,800	400	600	600	700	74,900
Putnam	29,500	51,600	9,000	300	3,500	800	2,700	97,400
St. Johns	21,100	36,200	5,000	900	3,200	400	1,200	68,000
St. Lucie	1,100	--	--	--	--	(1/)	(1/)	1,100
Santa Rosa	4,100	21,900	1,500	6,900	--	2,500	100	37,000
Sarasota	6,200	100	--	--	--	(1/)	400	6,700
Seminole	3,700	10,600	800	(1/)	--	100	(1/)	15,200
Sumter	2,500	10,900	6,000	--	2,800	200	(1/)	22,400
Suwannee	15,900	30,200	800	21,700	6,500	1,900	200	77,200
Taylor	37,200	10,300	2,500	1,300	3,800	400	200	55,700
Union	6,500	27,000	1,000	--	4,400	500	200	39,600
Volusia	24,800	27,200	500	900	10,900	1,600	100	66,000
Wakulla	9,800	7,100	3,500	--	--	800	100	21,300
Walton	14,700	25,100	4,200	1,000	100	2,200	100	47,400
Washington	10,700	23,400	2,400	--	1,200	2,100	3,700	43,500
State	1,027,900	1,111,500	232,400	87,700	155,600	50,700	46,000	2,711,800

1/ Less than 50 cords.

Table 16.--Commodity drain of pine by county and product, 1948

(In thousand board feet)

County	Sawlogs	Pulpwood	Veneer bolts	Poles and piling	Hewn cross ties	Fuelwood	Other	All products
Alachua	16,907	8,610	865	493	4,297	435	46	31,653
Baker	8,927	7,536	30	41	1,156	91	116	17,897
Bay	1,287	3,305	--	--	--	124	--	4,716
Bradford	2,996	7,845	34	627	561	200	--	12,263
Brevard	2,980	594	--	27	167	24	--	3,792
Broward	78	--	--	5	25	12	--	120
Calhoun	2,620	3,022	--	--	24	187	228	6,081
Charlotte	722	13	--	--	--	4	--	739
Citrus	1,332	913	434	--	951	8	--	3,638
Clay	6,549	4,519	201	91	424	54	429	12,267
Collier	12,811	1,065	--	--	--	8	--	13,884
Columbia	6,763	5,101	212	892	3,839	254	--	17,061
Dade	1,336	185	--	36	--	43	--	1,600
De Soto	2,904	517	308	386	22	16	659	4,812
Dixie	2,028	611	--	570	89	36	--	3,334
Duval	13,993	12,218	1,054	302	2,425	200	194	30,386
Escambia	8,303	7,214	--	2,132	--	498	--	18,147
Flagler	1,614	4,365	--	108	431	36	--	6,554
Franklin	3,014	869	--	--	--	62	--	3,945
Gadsden	8,217	3,432	--	60	347	591	24	12,671
Gilchrist	4,867	2,077	--	135	478	109	--	7,666
Glades	89	3	--	--	51	8	--	151
Gulf	9,445	1,791	--	--	--	31	--	11,267
Hamilton	5,077	4,305	61	1,144	1,139	182	--	11,908
Hardee	4,668	2,926	268	22	--	43	310	8,237
Hendry	881	6	--	--	--	4	--	891
Hernando	9,015	1,900	434	--	1,016	20	14	12,399
Highlands	587	305	--	56	43	8	--	999
Hillsborough	9,878	3,984	460	17	175	177	459	15,150
Holmes	8,826	2,799	--	222	31	560	4,935	17,373
Indian River	552	506	--	--	--	24	--	1,082
Jackson	5,926	4,503	--	697	89	1,059	1,758	14,032
Jefferson	6,773	1,555	108	--	1,100	374	--	9,910
Lafayette	19,065	2,017	78	2,972	542	54	--	24,728
Lake	2,554	4,507	410	13	1,130	55	--	8,669
Lee	1,508	372	--	183	23	20	--	2,106
Leon	3,974	2,305	--	--	256	405	--	6,940
Levy	14,045	4,260	434	728	3,306	182	--	22,955
Liberty	3,918	3,718	--	--	4	62	--	7,702
Madison	10,901	4,184	210	1,295	2,527	182	--	19,299
Manatee	1,669	392	97	--	--	27	232	2,417
Marion	14,567	18,943	4,150	254	5,331	363	807	44,415
Martin	785	3	--	7	49	12	--	856
Monroe	--	--	--	--	32	4	--	36
Nassau	8,180	7,473	252	3,080	1,725	109	271	21,090
Okaloosa	5,962	5,780	--	871	836	342	--	13,791
Okeechobee	2,672	460	--	--	--	8	--	3,140
Orange	3,595	2,084	98	--	380	47	--	6,204
Osceola	17,629	2,510	39	--	25	16	28	20,247
Palm Beach	2,525	--	--	7	--	32	--	2,564
Pasco	13,454	2,257	963	143	226	35	255	17,333
Pinellas	1,915	226	--	10	--	32	--	2,183
Polk	17,575	3,908	455	131	75	170	264	22,578
Putnam	11,983	10,209	942	7	875	163	1,254	25,433
St. Johns	8,534	7,164	334	309	889	91	522	17,843
St. Lucie	580	--	--	--	--	8	--	588
Santa Rosa	1,994	4,331	--	2,351	--	467	58	9,201
Sarasota	3,202	27	--	--	--	8	155	3,392
Seminole	1,452	2,092	59	--	--	28	--	3,631
Sumter	1,190	2,156	1,245	--	1,003	35	--	5,629
Suwannee	8,261	5,955	149	7,333	1,722	417	--	23,837
Taylor	17,063	2,025	--	426	1,131	91	--	20,736
Union	2,924	5,315	33	--	861	109	77	9,319
Volusia	8,725	5,375	--	309	2,133	345	--	16,887
Wakulla	4,096	1,403	--	--	--	156	--	5,655
Walton	5,743	4,959	--	348	--	436	--	11,486
Washington	4,026	4,623	--	--	83	405	1,645	10,782
State	398,231	219,627	14,417	28,840	44,044	10,398	14,740	730,297

Table 17.--Commodity drain of pine by county and product, 1948

(In standard cords)

County	Sawlogs	Pulpwood	Veneer bolts	Poles and piling	Hewn cross ties	Fuelwood	Other	All products
Alachua	32,500	43,500	2,200	1,500	12,000	1,600	300	93,600
Baker	17,200	38,100	100	100	3,200	300	300	59,300
Bay	2,500	16,700	--	--	--	400	(1/)	19,600
Bradford	5,800	39,700	100	1,800	1,600	700	(1/)	49,700
Brevard	5,700	3,000	--	100	500	100	(1/)	9,400
Broward	100	--	--	(1/)	100	100	(1/)	300
Calhoun	5,000	15,200	--	--	100	700	600	21,600
Charlotte	1,400	100	--	--	--	(1/)	--	1,500
Citrus	2,600	4,600	1,100	--	2,700	(1/)	(1/)	11,000
Clay	12,600	22,800	500	300	1,200	200	1,000	38,600
Collier	24,700	5,400	--	--	--	(1/)	(1/)	30,100
Columbia	13,000	25,800	600	2,600	10,700	900	300	53,900
Dade	2,600	900	--	100	--	200	(1/)	3,800
De Soto	5,600	2,600	700	1,200	100	100	1,600	11,900
Dixie	3,900	3,100	--	1,700	300	100	(1/)	9,100
Duval	26,900	61,800	2,700	900	6,800	700	500	100,300
Escambia	16,000	36,500	--	6,300	--	1,800	(1/)	60,600
Flagler	3,100	22,100	--	300	1,200	200	(1/)	26,900
Franklin	5,800	4,400	--	--	--	200	(1/)	10,400
Gadsden	15,800	17,300	--	100	1,000	2,200	200	36,600
Gilchrist	9,400	10,500	--	400	1,300	400	(1/)	22,000
Glades	200	(1/)	--	--	200	(1/)	(1/)	400
Gulf	18,200	9,100	--	--	--	100	(1/)	27,400
Hamilton	9,800	21,700	100	3,400	3,100	700	100	38,900
Hardee	9,000	14,800	600	100	--	200	700	25,400
Hendry	1,700	(1/)	--	--	--	(1/)	--	1,700
Hernando	17,400	9,600	1,100	--	2,800	100	(1/)	31,000
Highlands	1,100	1,600	--	200	100	(1/)	(1/)	3,000
Hillsborough	19,000	20,200	1,200	100	400	600	1,100	42,600
Holmes	17,000	14,200	--	700	100	2,000	10,500	44,500
Indian River	1,000	2,600	--	--	--	100	(1/)	3,700
Jackson	11,400	22,700	--	2,100	200	3,900	3,900	44,200
Jefferson	13,000	7,900	200	--	3,100	1,400	(1/)	25,600
Lafayette	36,700	10,200	200	8,800	1,500	200	(1/)	57,600
Lake	4,900	22,800	1,100	(1/)	3,100	200	(1/)	32,100
Lee	2,900	1,900	--	500	100	100	(1/)	5,500
Leon	7,600	11,700	--	--	700	1,500	(1/)	21,500
Levy	27,000	21,500	1,100	2,200	9,200	700	(1/)	61,700
Liberty	7,600	18,800	--	--	(1/)	200	(1/)	26,600
Madison	21,000	21,200	500	3,800	7,000	700	(1/)	54,200
Manatee	3,200	2,000	300	--	--	100	600	6,200
Marion	28,000	95,800	10,500	800	14,900	1,300	2,000	153,300
Martin	1,500	(1/)	--	(1/)	100	100	(1/)	1,700
Monroe	--	--	--	--	100	(1/)	(1/)	100
Nassau	15,800	37,700	600	9,100	4,800	400	700	69,100
Okaloosa	11,500	29,200	--	2,600	2,300	1,300	(1/)	46,900
Okeechobee	5,200	2,300	--	--	--	(1/)	(1/)	7,500
Orange	6,900	10,500	200	--	1,000	200	100	18,900
Osceola	33,900	12,600	100	--	100	100	100	46,900
Palm Beach	4,900	--	--	(1/)	--	100	(1/)	5,000
Pasco	25,900	11,400	2,500	400	600	100	600	41,500
Pinellas	3,700	1,200	--	(1/)	--	100	(1/)	5,000
Polk	33,800	19,700	1,200	400	200	600	700	56,600
Putnam	23,100	51,600	2,400	(1/)	2,400	600	2,700	82,800
St. Johns	16,400	36,200	900	900	2,500	300	1,100	58,300
St. Lucie	1,100	--	--	--	--	(1/)	(1/)	1,100
Santa Rosa	3,800	21,900	--	6,900	--	1,700	200	34,500
Sarasota	6,100	200	--	--	--	(1/)	400	6,700
Seminole	2,800	10,600	100	--	--	100	(1/)	13,600
Sumter	2,300	10,900	3,200	--	2,800	100	(1/)	19,300
Suwannee	15,900	30,100	400	21,600	4,800	1,500	100	74,400
Taylor	32,800	10,300	--	1,300	3,200	300	(1/)	47,900
Union	5,600	26,900	100	--	2,400	400	200	35,600
Volusia	16,800	27,200	--	900	5,900	1,300	100	52,200
Wakulla	7,900	7,000	--	--	--	600	(1/)	15,500
Walton	11,100	25,100	--	1,000	--	1,600	(1/)	38,800
Washington	7,700	23,400	--	--	200	1,500	3,500	36,300
State	766,400	1,110,400	36,600	85,200	122,700	38,000	34,200	2,193,500

1/ Less than 50 cords.

Table 18.--Commodity drain by county and species group, 1948

(In thousand board feet)

County	Pine	Cypress and cedar	Hardwoods	All species
Alachua	31,653	789	4,420	36,862
Baker	17,897	988	273	19,158
Bay	4,716	6	66	4,788
Bradford	12,263	125	569	12,957
Brevard	3,792	--	1	3,793
Broward	120	233	(1/)	353
Calhoun	6,081	497	6,626	13,204
Charlotte	739	84	(1/)	823
Citrus	3,638	397	1,087	5,122
Clay	12,267	298	1,925	14,490
Collier	13,884	31,066	(1/)	44,950
Columbia	17,061	949	2,682	20,692
Dade	1,600	--	1	1,601
De Soto	4,812	57	626	5,495
Dixie	3,334	532	1,316	5,182
Duval	30,386	800	1,070	32,256
Escambia	18,147	--	2,288	20,435
Flagler	6,554	882	7	7,443
Franklin	3,945	158	28	4,131
Gadsden	12,671	--	7,386	20,057
Gilchrist	7,666	90	290	8,046
Glades	151	13	(1/)	164
Gulf	11,267	4,400	2,143	17,810
Hamilton	11,908	476	649	13,033
Hardee	8,237	6	1,059	9,302
Hendry	891	58	(1/)	949
Hernando	12,399	206	2,021	14,626
Highlands	999	68	(1/)	1,067
Hillsborough	15,150	1,081	11,172	27,403
Holmes	17,373	614	2,476	20,463
Indian River	1,082	11	1	1,094
Jackson	14,032	446	7,467	21,945
Jefferson	9,910	164	5,554	15,628
Lafayette	24,728	216	112	25,056
Lake	8,669	10,235	662	19,566
Lee	2,106	174	(1/)	2,280
Leon	6,940	29	2,177	9,146
Levy	22,955	2,518	5,945	31,418
Liberty	7,702	4,294	4,511	16,507
Madison	19,299	537	4,644	24,480
Manatee	2,417	--	110	2,527
Marion	44,415	2,032	5,332	51,779
Martin	856	--	(1/)	856
Monroe	36	--	4	40
Nassau	21,090	389	559	22,038
Okaloosa	13,791	48	1,012	14,851
Okeechobee	3,140	--	(1/)	3,140
Orange	6,204	415	419	7,038
Osceola	20,247	2,507	384	23,138
Palm Beach	2,564	21	1	2,586
Pasco	17,333	5,135	4,434	26,902
Pinellas	2,183	67	1	2,251
Polk	22,578	6,556	1,219	30,353
Putnam	25,433	1,121	4,768	31,322
St. Johns	17,843	932	2,989	21,764
St. Lucie	588	--	(1/)	588
Santa Rosa	9,201	77	720	9,998
Sarasota	3,392	3	(1/)	3,395
Seminole	3,631	371	285	4,287
Sumter	5,629	100	1,037	6,766
Suwannee	23,837	503	395	24,735
Taylor	20,736	2,102	1,032	23,870
Union	9,319	1,078	390	10,787
Volusia	16,887	5,023	512	22,422
Wakulla	5,655	185	2,048	7,888
Walton	11,486	772	2,555	14,813
Washington	10,782	684	2,051	13,517
State	730,297	93,618	113,511	937,426

1/ Less than 500 board feet.

Table 19.--Commodity drain by county and species group, 1948

(In thousand cubic feet)

County	Pine	Cypress and cedar	Hardwoods	All species
Alachua	7,994	166	1,043	9,203
Baker	4,977	227	68	5,272
Bay	1,595	1	22	1,618
Bradford	4,043	27	140	4,210
Brevard	828	(1/)	(1/)	828
Broward	25	49	(1/)	74
Calhoun	1,791	108	1,510	3,409
Charlotte	136	17	(1/)	153
Citrus	931	80	249	1,260
Clay	3,256	61	408	3,725
Collier	2,729	6,342	(1/)	9,071
Columbia	4,553	218	619	5,390
Dade	337	1	1	339
De Soto	1,034	12	146	1,192
Dixie	785	107	320	1,212
Duval	8,407	167	256	8,830
Escambia	5,053	(1/)	492	5,545
Flagler	2,186	204	3	2,393
Franklin	908	32	9	949
Gadsden	3,138	(1/)	1,511	4,649
Gilchrist	1,890	19	69	1,978
Glades	31	3	(1/)	34
Gulf	2,424	898	423	3,745
Hamilton	3,265	109	158	3,532
Hardee	2,153	2	230	2,385
Hendry	162	12	(1/)	174
Hernando	2,731	42	447	3,220
Highlands	253	14	(1/)	267
Hillsborough	3,665	224	2,614	6,503
Holmes	3,839	125	547	4,511
Indian River	309	4	(1/)	313
Jackson	3,703	91	1,637	5,431
Jefferson	2,241	35	1,308	3,584
Lafayette	5,121	46	29	5,196
Lake	2,650	2,114	172	4,936
Lee	477	35	(1/)	512
Leon	1,821	5	519	2,345
Levy	5,361	512	1,270	7,143
Liberty	2,215	880	930	4,025
Madison	4,666	132	1,089	5,887
Manatee	538	(1/)	25	563
Marion	12,744	421	1,248	14,413
Martin	160	(1/)	(1/)	160
Monroe	9	(1/)	1	10
Nassau	5,779	83	134	5,996
Okaloosa	3,907	10	249	4,166
Okeechobee	667	(1/)	(1/)	667
Orange	1,611	86	97	1,794
Osceola	4,198	511	80	4,789
Palm Beach	464	5	(1/)	469
Pasco	3,682	1,050	1,025	5,757
Pinellas	446	15	(1/)	461
Polk	4,977	1,347	272	6,596
Putnam	6,946	235	1,033	8,214
St. Johns	4,894	200	641	5,735
St. Lucie	106	(1/)	(1/)	106
Santa Rosa	2,818	16	194	3,028
Sarasota	619	1	(1/)	620
Seminole	1,123	76	64	1,263
Sumter	1,601	21	243	1,865
Suwannee	6,236	123	113	6,472
Taylor	4,288	438	244	4,970
Union	2,924	249	96	3,269
Volusia	4,424	1,090	128	5,642
Wakulla	1,344	38	459	1,841
Walton	3,237	157	585	3,979
Washington	3,019	140	478	3,637
State	186,444	19,433	25,648.	231,525

1/ Less than 500 cubic feet.

Table 20.--Commodity drain by county and species group, 1948

(In standard cords)

County	Pine	Cypress and cedar	Hardwoods	All species
Alachua	93,600	1,900	12,300	107,800
Baker	59,300	2,600	800	62,700
Bay	19,600	(1/)	300	19,900
Bradford	49,700	300	1,600	51,600
Brevard	9,400	(1/)	(1/)	9,400
Broward	300	500	(1/)	800
Calhoun	21,600	1,200	17,900	40,700
Charlotte	1,500	200	(1/)	1,700
Citrus	11,000	900	2,900	14,800
Clay	38,600	700	4,700	44,000
Collier	30,100	71,000	(1/)	101,100
Columbia	53,900	2,500	7,300	63,700
Dade	3,800	(1/)	(1/)	3,800
De Soto	11,900	100	1,700	13,700
Dixie	9,100	1,200	3,700	14,000
Duval	100,300	1,900	3,000	105,200
Escambia	60,600	(1/)	5,600	66,200
Flagler	26,900	2,300	(1/)	29,200
Franklin	10,400	400	100	10,900
Gadsden	36,600	(1/)	17,200	53,800
Gilchrist	22,000	200	800	23,000
Glades	400	(1/)	(1/)	400
Gulf	27,400	10,000	4,800	42,200
Hamilton	38,900	1,300	1,900	42,100
Hardee	25,400	(1/)	2,700	28,100
Hendry	1,700	200	(1/)	1,900
Hernando	31,000	500	5,200	36,700
Highlands	3,000	100	(1/)	3,100
Hillsborough	42,600	2,600	30,900	76,100
Holmes	44,500	1,400	6,300	52,200
Indian River	3,700	(1/)	(1/)	3,700
Jackson	44,200	1,000	18,900	64,100
Jefferson	25,600	400	15,500	41,500
Lafayette	57,600	500	300	58,400
Lake	32,100	23,800	2,000	57,900
Lee	5,500	400	(1/)	5,900
Leon	21,500	100	6,100	27,700
Levy	61,700	5,800	14,600	82,100
Liberty	26,600	9,800	10,700	47,100
Madison	54,200	1,500	12,900	68,600
Manatee	6,200	(1/)	300	6,500
Marion	153,300	4,800	14,700	172,800
Martin	1,700	(1/)	(1/)	1,700
Monroe	100	(1/)	(1/)	100
Nassau	69,100	1,000	1,600	71,700
Okaloosa	46,900	100	2,900	49,900
Okeechobee	7,500	(1/)	(1/)	7,500
Orange	18,900	1,000	1,200	21,100
Osceola	46,900	5,800	900	53,600
Palm Beach	5,000	100	(1/)	5,100
Pasco	41,500	11,800	12,100	65,400
Pinellas	5,000	200	(1/)	5,200
Polk	56,600	15,100	3,200	74,900
Putnam	82,800	2,700	11,900	97,400
St. Johns	58,300	2,300	7,400	68,000
St. Lucie	1,100	(1/)	(1/)	1,100
Santa Rosa	34,500	200	2,300	37,000
Sarasota	6,700	(1/)	(1/)	6,700
Seminole	13,600	800	800	15,200
Sumter	19,300	200	2,900	22,400
Suwannee	74,400	1,400	1,400	77,200
Taylor	47,900	4,900	2,900	55,700
Union	35,600	2,800	1,200	39,600
Volusia	52,200	12,300	1,500	66,000
Wakulla	15,500	400	5,400	21,300
Walton	38,800	1,800	6,800	47,400
Washington	36,300	1,600	5,600	43,500
State	2,193,500	218,600	299,700	2,711,800

1/ Less than 50 cords.

How the Data Was Obtained

Following the completion of the forest inventory of Florida in 1949, the Southeastern Forest Experiment Station and the Florida Forest Service cooperated in a field survey to determine the volume of raw forest products used in Florida or shipped to out-of-state users in 1948. A complete canvass of sawmills and primary nonlumber plants in Florida and adjoining areas was made to obtain 1948 production of logs, bolts, and stumps. Treating plants, railroads, large utilities, and exporters were contacted for data on hewn cross ties, poles, and piling.

The 1948 production of fuel wood, fence posts, and farm timbers was estimated through an area sample. Small areas totaling approximately one percent of the area of the State were selected mechanically from the Master Sample of Agriculture, a sampling system used by the Bureau of Agricultural Economics in agricultural sampling work. A complete canvass of each area was made to determine the amount of these items produced during 1948. The data were then expanded to give county and state totals.

Additional information was needed to convert the 1948 production data to commodity drain. To obtain this, a separate study was made on a random selection of the woods operations for each of the ten leading products. The study was made on active operations in order to determine: (1) the extent of overutilization or waste, compared to Forest Survey standards, in trees cut for the various products, (2) the species, tree sizes, log diameters, and quality of material used, (3) the species, size, and quality of trees ruined in cutting and logging operations, and (4) other information such as bark thicknesses and length of bolts for use in converting the information to the different units of measure.

Reliability of the Data

Four general sources of error could affect the accuracy of the data used in the production and drain estimates. These are: (1) reporting errors, (2) canvassing errors, (3) errors in compiling data, and (4) sampling errors.

Most producers of fuel wood, fence posts, and farm timbers, as well as some small sawmills and other manufacturers, furnished estimates of production rather than actual bookkeeping records. Individual errors caused by this are not apt to be large and may tend to be compensating; but it is not possible to measure them. Enumerating work was done by men familiar with the locality who had been adequately trained to do accurate canvassing work. All records and computations were carefully checked to eliminate possible error.

Sampling errors (standard errors of estimates) are the only errors that can be evaluated. They are measures of the reliability of the estimates based on the size of the sample and individual variations within it.

The sampling error for the total cubic-foot commodity drain estimate was ± 1.8 percent. This indicates the chances are two out of three that the estimated drain was within 1.8 percent of the actual. Sampling errors shown apply only to state totals. As the totals are broken down by counties and species groups, their reliability diminishes. Detailed use of the data on a county basis is not advisable unless a number of counties are grouped together.

Sampling error in commodity drain estimates

Product	Error of cubic-foot estimates
	(Percent)
Sawlogs	2.4
Pulpwood	2.5
Veneer	5.3
Poles and piling	6.3
Hewn cross ties	16.4
Fuel wood	6.1
Other	4.4
Total drain	1.8

The sampling error was computed only for cubic-foot drain. However, the reliability would be slightly higher for board-foot drain and approximately the same for standard-cord drain.

The sampling error in the production estimate would be very low, since a complete canvass was made except in the case of fuel wood, fence posts, and farm timbers. Computation of the production estimate was mainly a matter of combining individual reports to obtain county and state totals.

